



North Washington Street Bridge Project

Boston, Massachusetts

Charlestown Neighborhood Council Briefing

April 6, 2016



Driving Massachusetts Forward
massDOT

City of Boston: Para Jayasinghe, City Engineer

Mass DOT: Michael O'Dowd, Project Manager



Project Team


City of Boston
Mass DOT Highway Division
Federal Highway Administration



Bridge Engineer: Benesch
Bridge Architect: Rosales + Partners
Public Involvement Specialist: Howard Stein Hudson

ROSALES + PARTNERS
ARCHITECTS ENGINEERS





Existing Bridge

CHARLESTOWN

BOSTON HARBOR

NORTH END

NORTH WASHINGTON STREET BRIDGE

LOVEJOY WHARF

ZAKIM BRIDGE



Existing Bridge Context

CHARLES RIVER

Project Limits

Project Limits

NORTH END

CHARLESTOWN

BOSTON HARBOR

Project History

- 1898 Existing Bridge Constructed - 12 spans, 1087' in Length
- 1956 Bridge is Reconstructed
- 1961 Swing Span Closed Permanently
- 1977 Elevated Street Railway Structure Removed
- 1992 Adjoining Warehouse Bridge Structure in Charlestown is Replaced
- 2003 Center Truss Bay Lanes Closed
- 2004-2015 Ongoing Maintenance and Repairs



Existing Bridge



Existing Bridge



Existing Bridge



Project Goals

- Replacement of Structurally Deficient Bridge
- Multi-Modal Bridge as a Complete City Street over Water
- Improvements to Deficient Bike and Pedestrian Accommodations
- Improvements to Intersections Safety and Functionality
- Improvements to Navigation Channel
- Context Sensitive Bridge Design in Important Waterfront and Historic Bridge Location
- Visually Appealing Bridge Design Complementing the Zakim Bridge

Proposed Bridge – Design Philosophy

Form

Iconic
(Zakim Bridge)

vs.

Iconic-lite
(Charlestown Bridge)



Function

Interstate Highway
(Zakim Bridge)

vs.

City Street over water
(Charlestown Bridge)

Bridge Type Study Alternatives



Bridge Type Selection Criteria

- Constructability
- Initial Construction Cost
- Life Cycle Maintenance Cost
- Structural Considerations
- Bridge Aesthetics
- Context Sensitive Considerations
- Environmental / Permitting

History of Public Outreach

- Meeting with DCR and Coast Guard: Spring 2014
- City of Boston Interdepartmental Briefing Including Boston Landmarks Commission: Summer 2014
- Charlestown Neighborhood Community Meeting: Fall of 2014
- North End Neighborhood Community Meeting: Fall of 2014
- Bicycle and Pedestrian Advocacy Groups Meeting Including Walk Boston, Livable Streets, and MassBike: Fall of 2014
- Charlestown Preservation Society: Winter of 2015
- Stakeholders Meetings Include Marriott Hotel, Constitution Marina, and Downtown North Association: Spring of 2015
- A Better City Transportation Committee : Spring of 2015
- Friends of City Square Park: Fall of 2015
- 25% Design Public Hearing: December 2015

Form - Zakim Bridge



Form – Existing Charlestown Bridge



Form - Proposed Bridge Aerial View



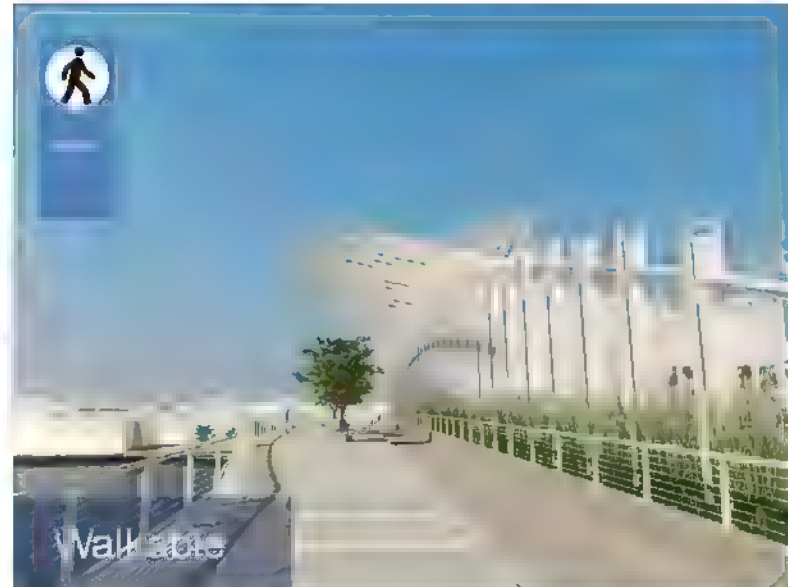
Form - Proposed Bridge Elevation View



Function – Zakim Bridge



Function - Proposed Bridge



Context Plan with Proposed Bridge

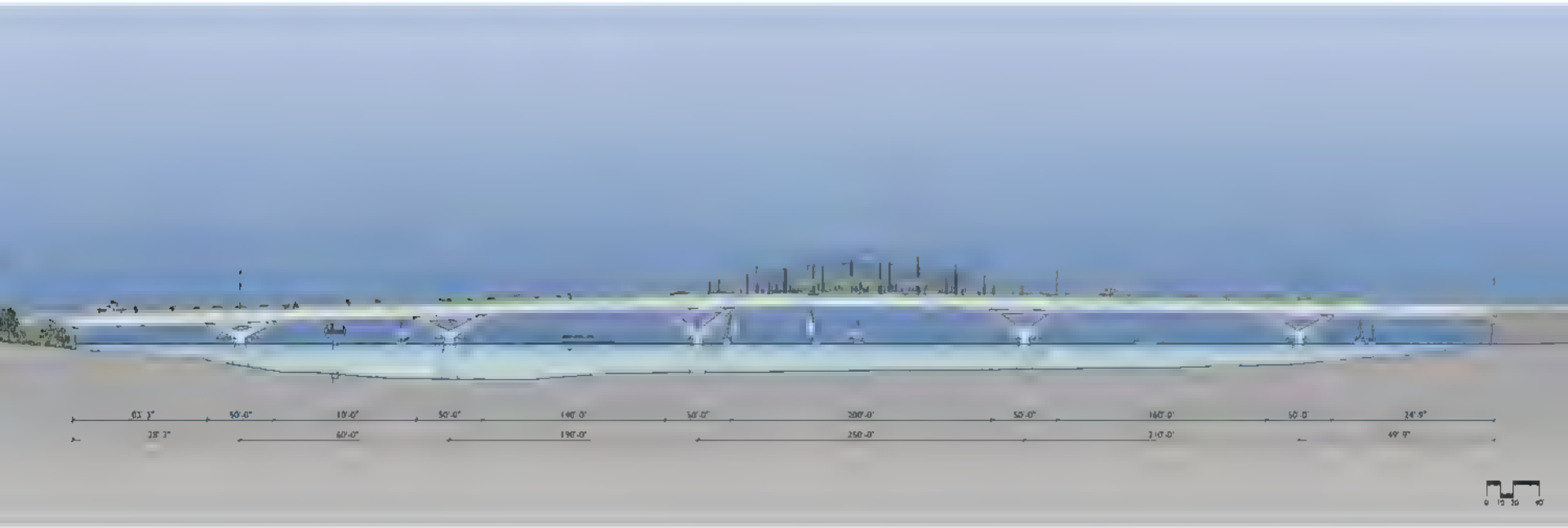


Project Limits

Project Limits

Proposed Bridge Elevation

- Constant Depth Trapezoidal Steel Box Superstructure
- Five Sets of Concrete V Piers Substructure
- Main Span 190 Feet
- Overall Length 1,087 Feet



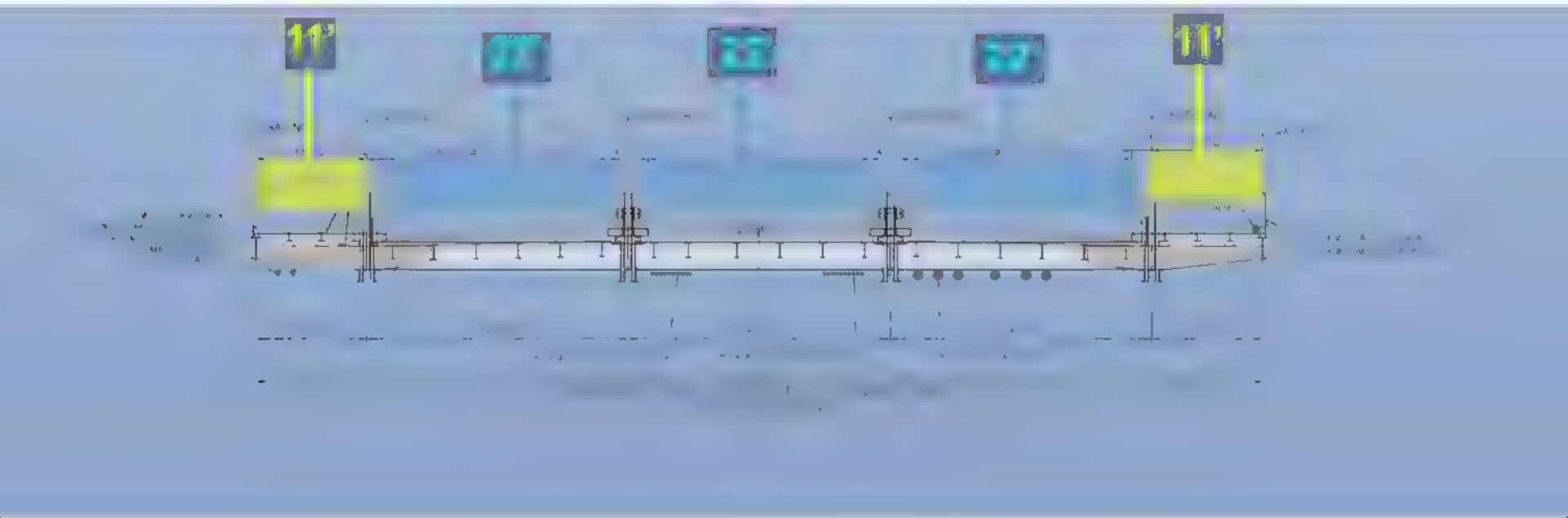
Existing Bridge Cross Section at Approach Spans

- Plate Girder Bridge
- Granite Historic Piers



Existing Bridge Cross Section at Navigation Span

- Swing Movable Span
- Steel Truss



Proposed Bridge Cross Section at Approach Spans

- Wide Sidewalks
- Separated Bike Lanes
- Two Vehicular Lanes in Each Direction

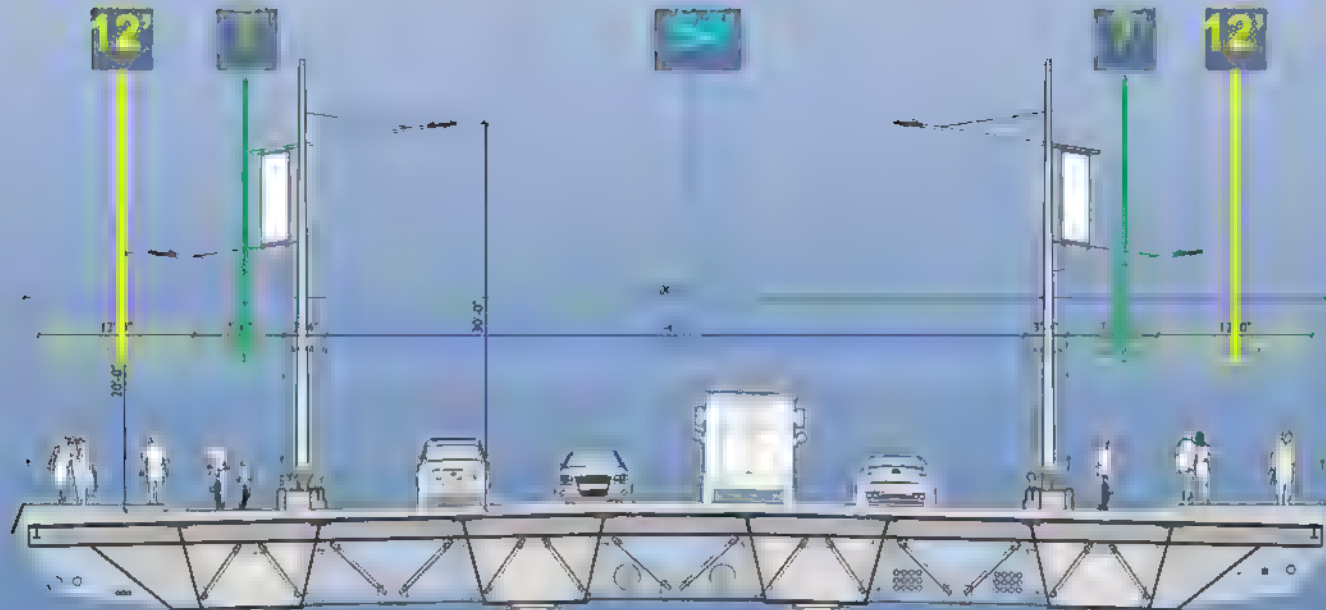


Proposed Bridge Cross Section at Navigation Span

- Pedestrian Overlooks
- Architectural Trellis and Plantings



Proposed Bridge Pier Detail

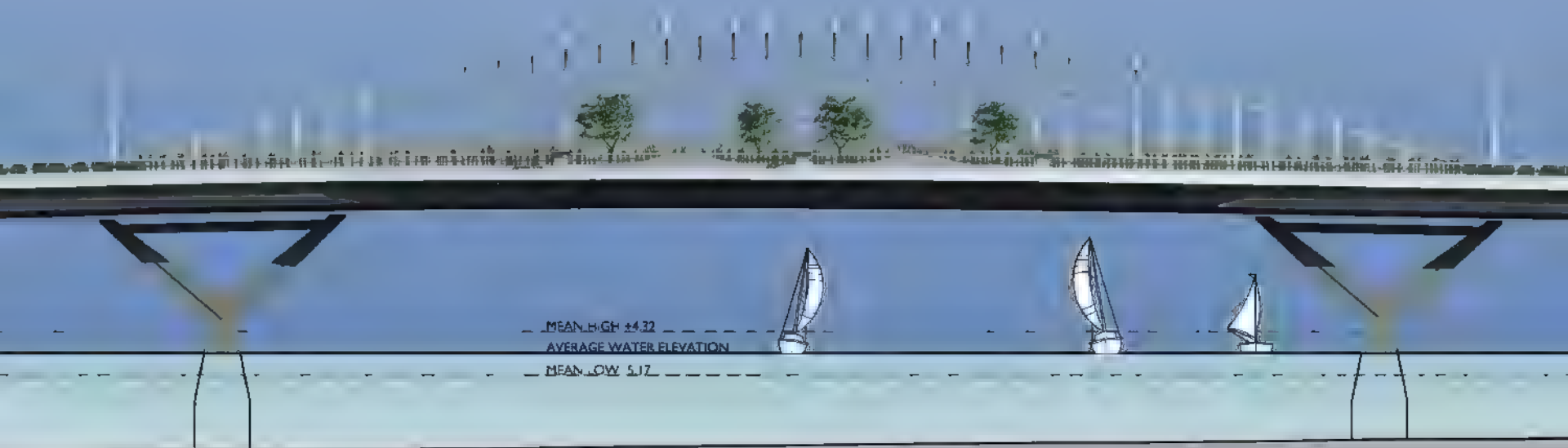


MEAN HIGH

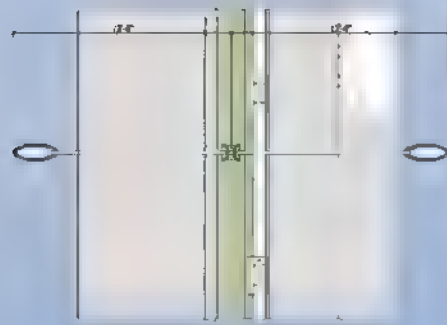
AVERAGE WATER ELEVATION

MEAN LOW

Elevation of Architectural Trellis



Roadway and Pedestrian Lighting



PLAN



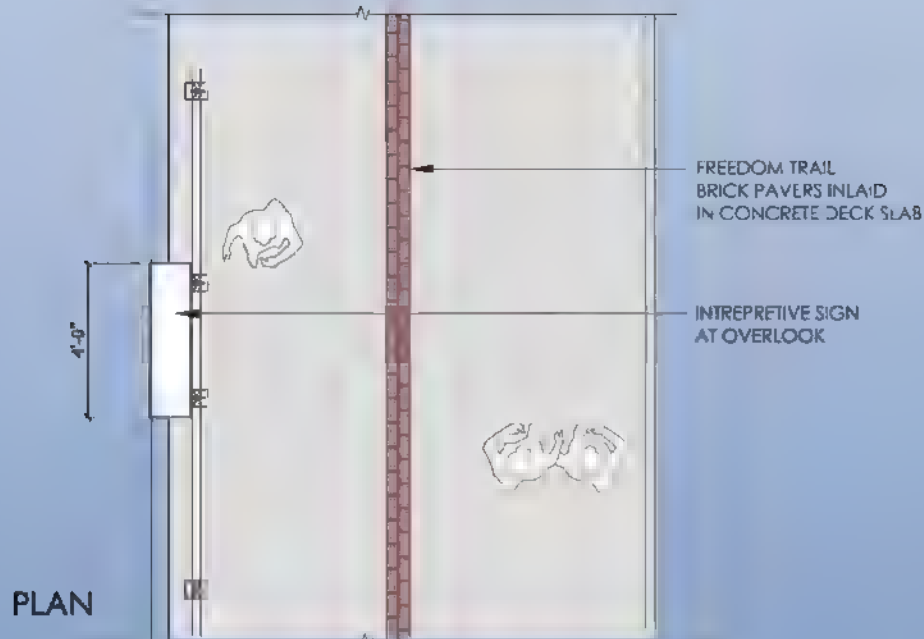
SECTION



ELEVATION



Pedestrian Railing



INTERPRETIVE SIGN
AT OVERLOOK

1'-5"

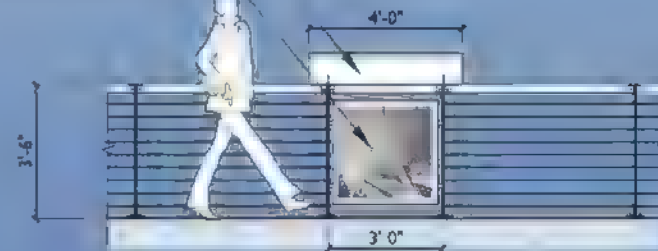
EMBOSSSED METAL
PANEL OF INTERPRETIVE
SUBJECT

SECTION

FREEDOM TRAIL
BRICK PAVERS INLAID
IN CONCRETE DECK SLAB

INTERPRETIVE SIGN
AT OVERLOOK

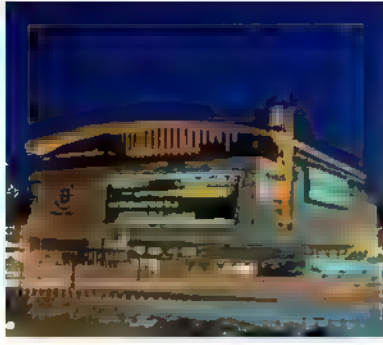
EMBOSSSED METAL PANEL
OF INTERPRETIVE SUBJECT



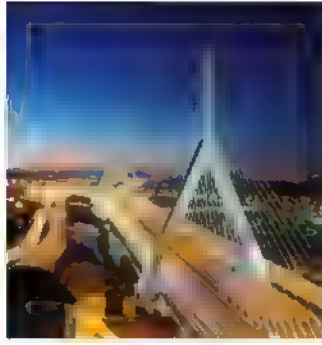
Suggested Themes for Interpretive Signage



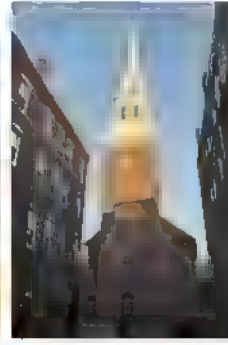
CUSTOM
HOUSE
TOWER



BOSTON
GARDEN



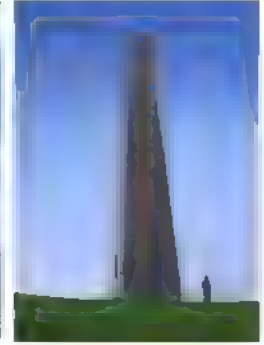
ZAKIM
BRIDGE



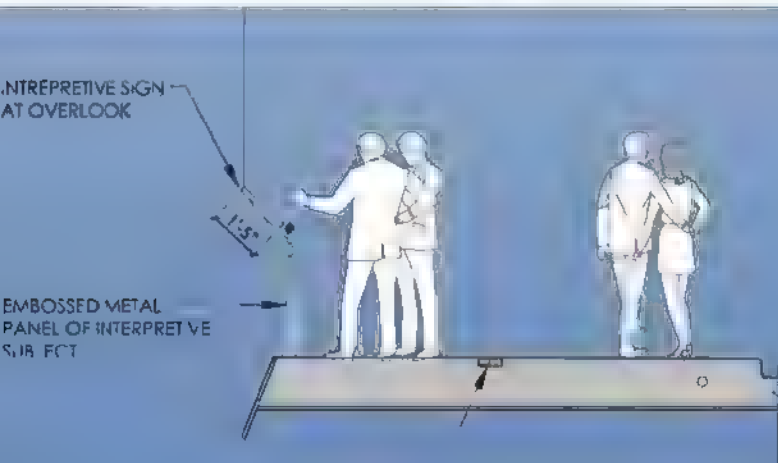
OLD
NORTH
CHURCH



U.S.
CONSTITUTION

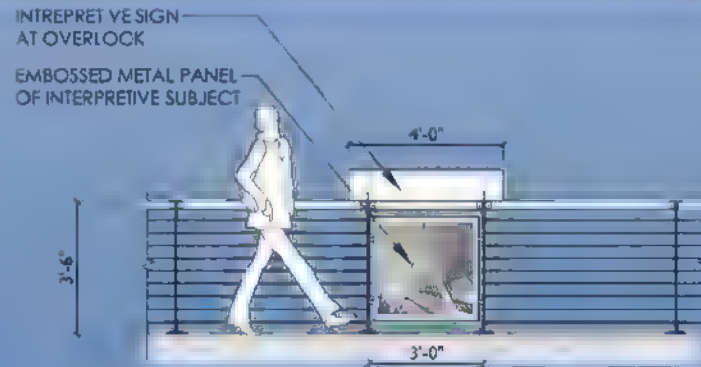


BUNKER
HILL
MONUMENT



SECTION

FREEDOM TRAIL
BRICK PAVERS Laid
IN CONCRETE DECK SLAB



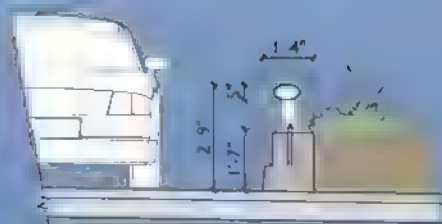
ELEVATION



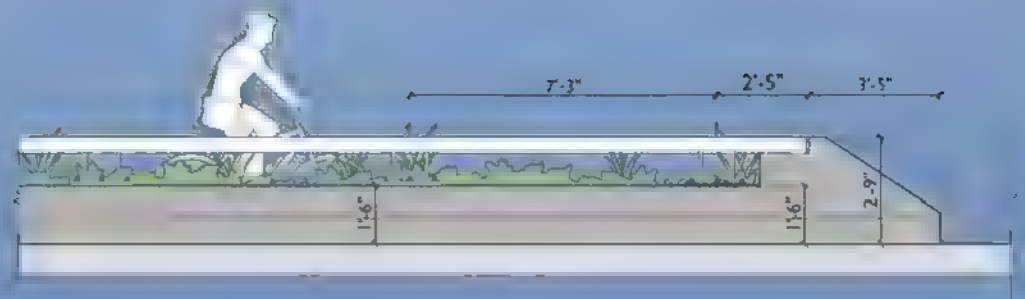
Vehicular Barrier



PLAN



SECTION



ELEVATION



3D Visualizations



Harbor Walk View



Harbor View



Pedestrian View



Pedestrian View



Motorist View





Pedestrian View at Overlook



Pedestrian View at Overlook



Pedestrian View at Grade Separated Walkway



Proposed Bridge Underside View



Proposed Bridge Night Elevation View



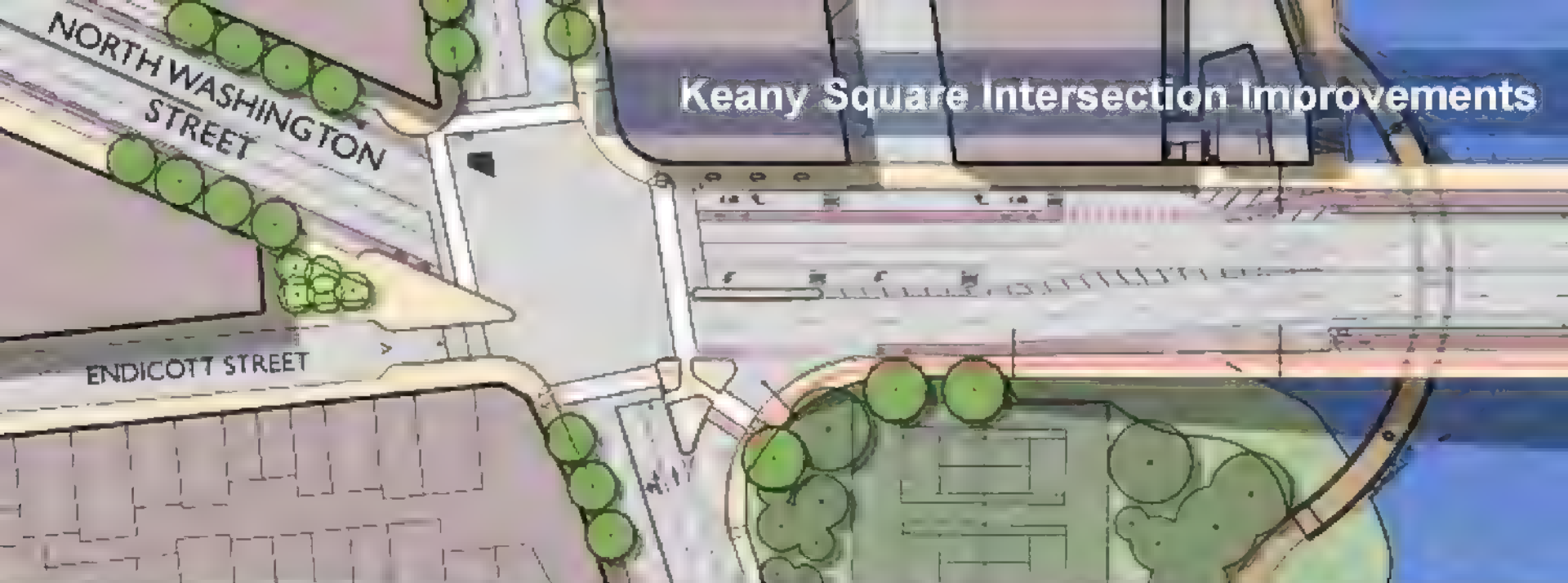
Connectivity Improvements



City Square Intersection Improvements

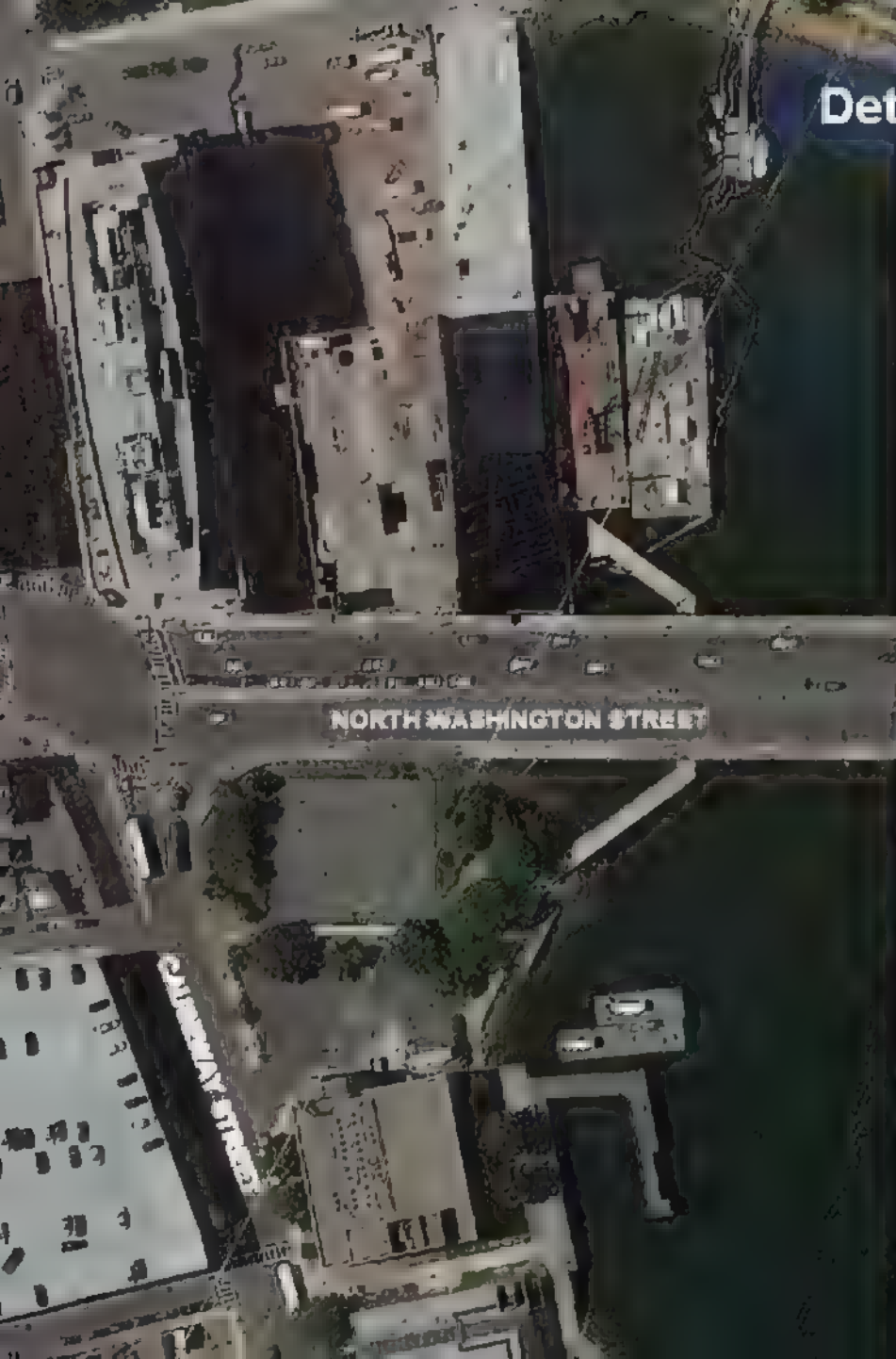


Keany Square Intersection Improvements



Detailed Plan at Paul Revere Landing Park

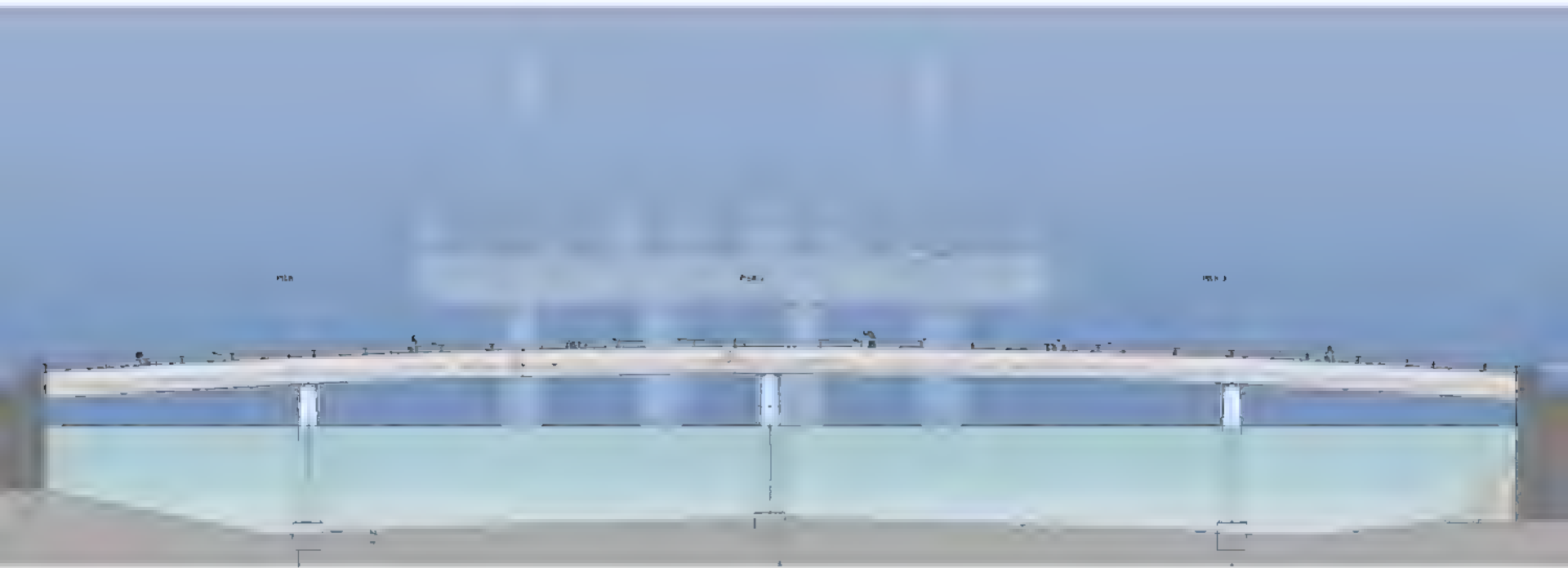




Detail Plan at Grade Separated Walkway



Grade Separated Walkway Elevation



Comparison Before and After Views

Before





After

Before



After





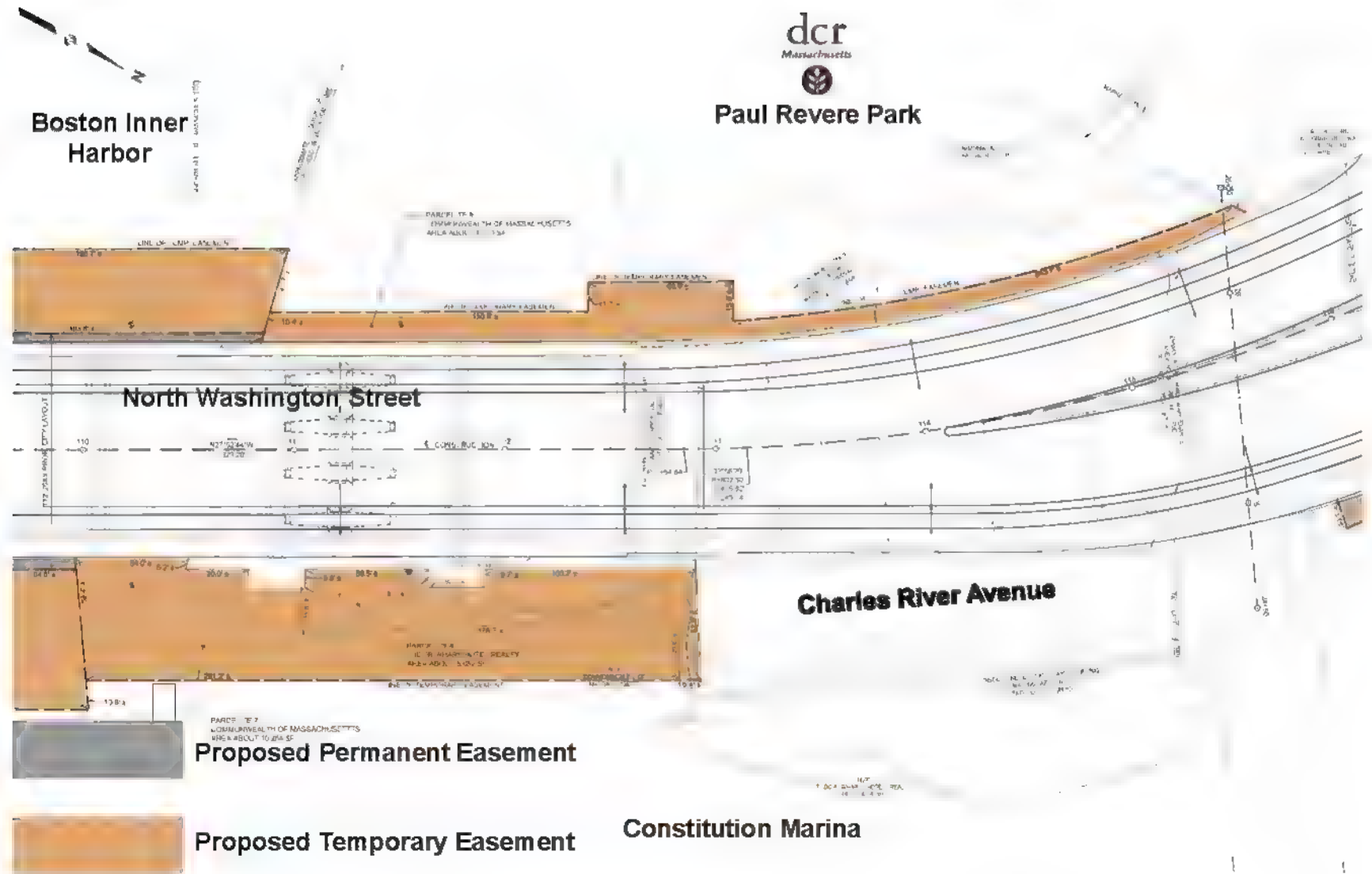
Before



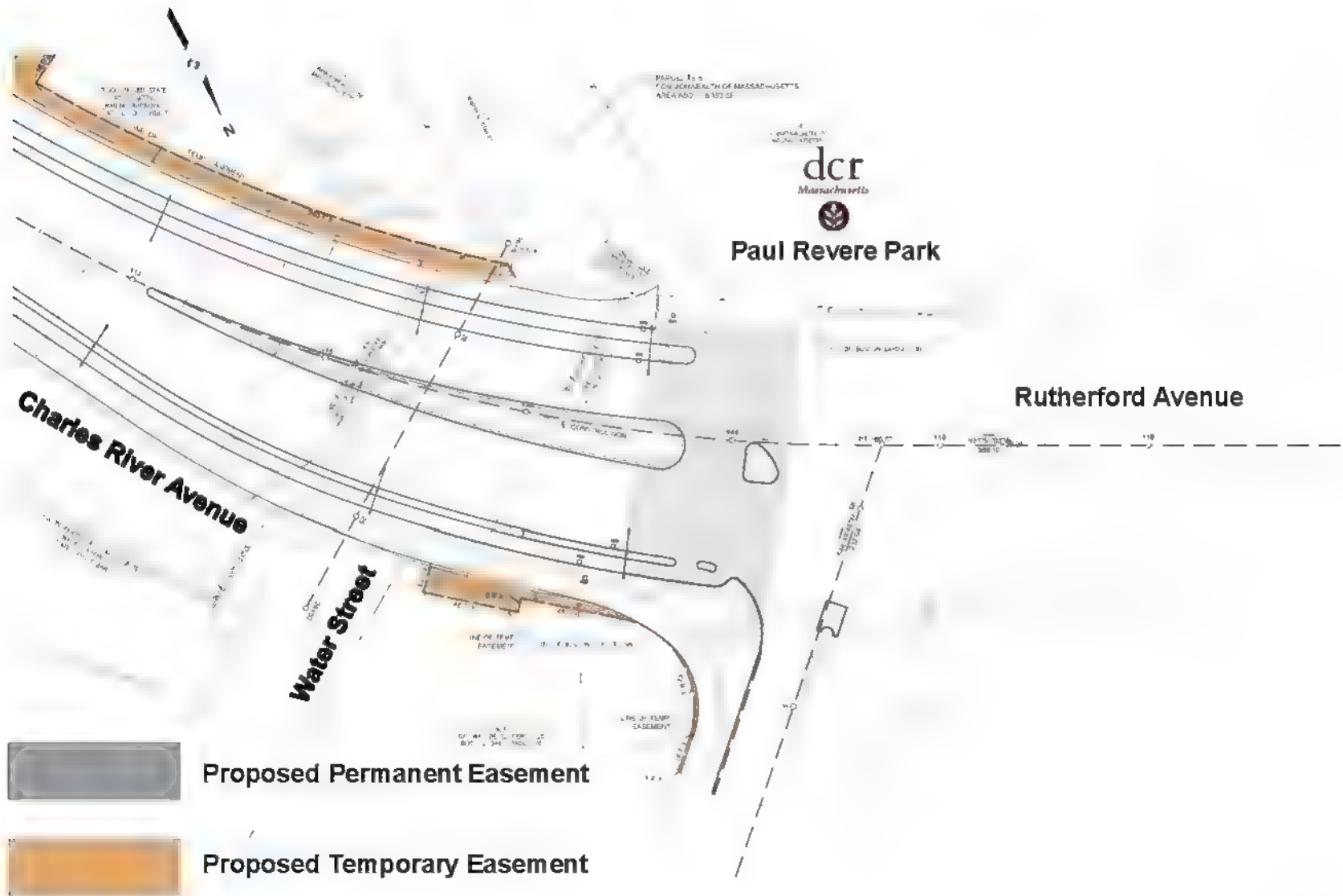
After

- FHWA is Lead Agency
- U.S. Coast Guard
- U.S. Army Corps of Engineers – Individual Permit
- Massachusetts Coastal Zone Management (CZM)
- National Marine Fisheries Service (NMFS)/Essential Fish Habitat Assessment (EFH)/Section 7 Consultation
- FHWA - Categorical Exclusion Determination (CE Checklist)
- FHWA - Section 4(f) de Minimis Impact to Park and Recreation Lands
- FHWA - Section 106 National Historic Preservation Act - Coordination with State Historic Preservation Officer and Boston Landmarks Commission
- MassDEP - Section 401 Water Quality Certification
- Water Quality Data Form (WQDF)/Stormwater Management
- Early Environmental Coordination Checklist (EECC)

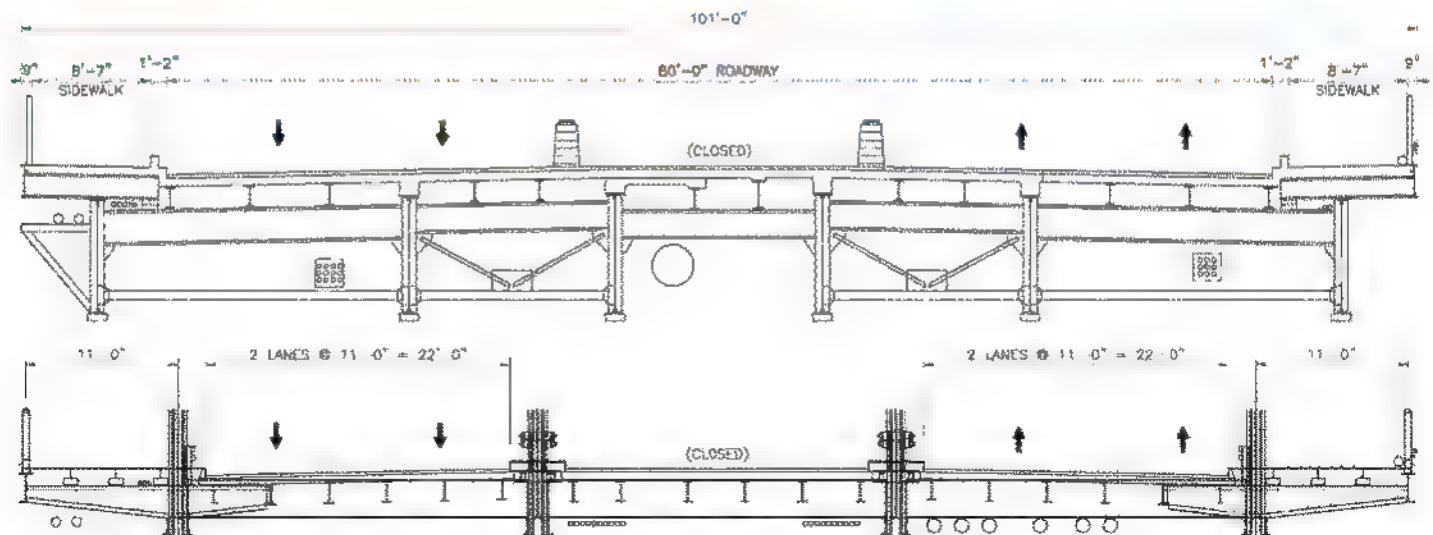
Right - Of - Way Impacts



Right - Of - Way Impacts

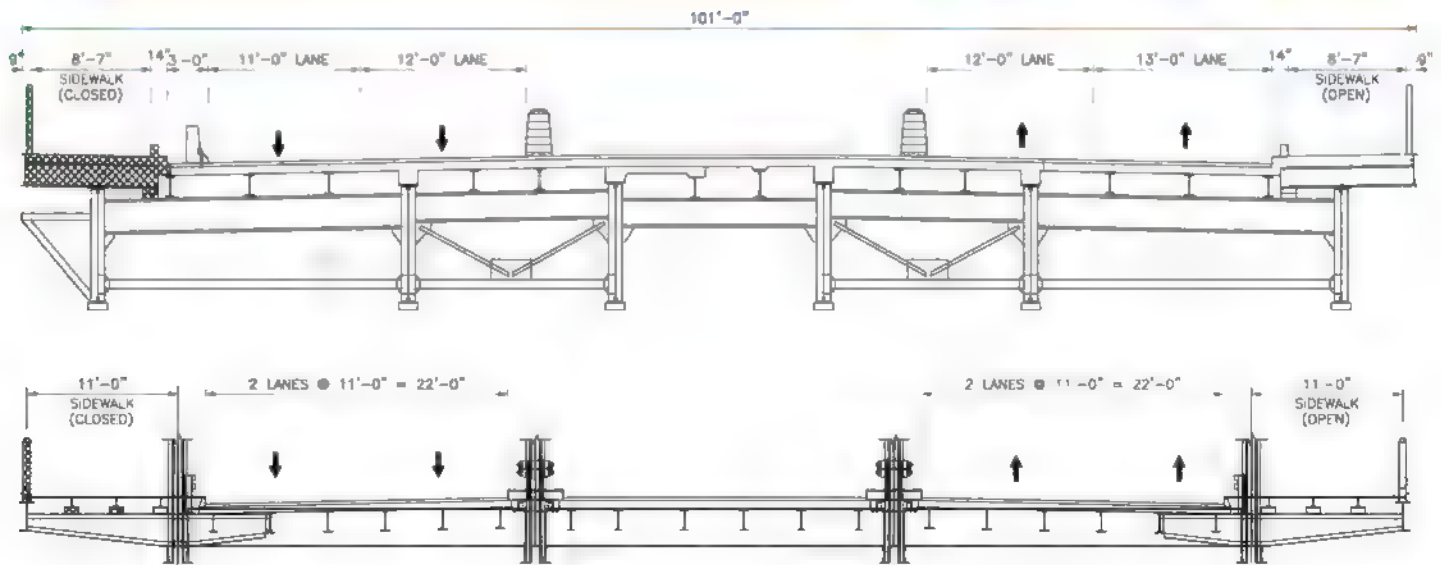


Construction Sequence and Traffic Impacts



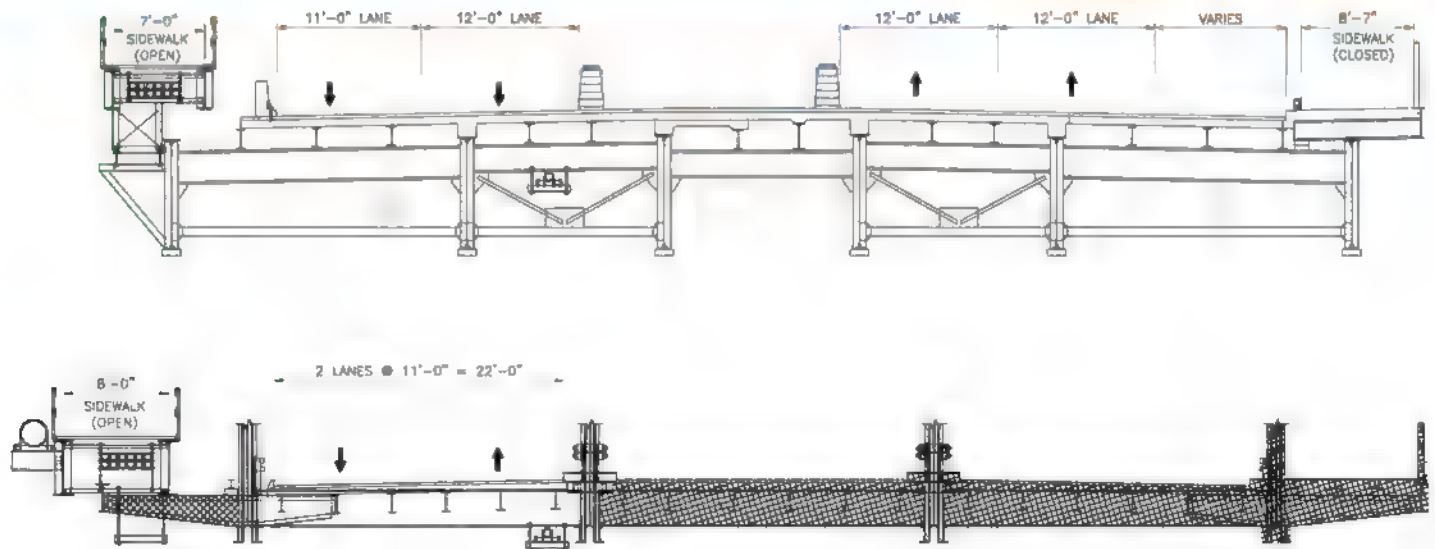
Existing

Construction Sequence and Traffic Impacts



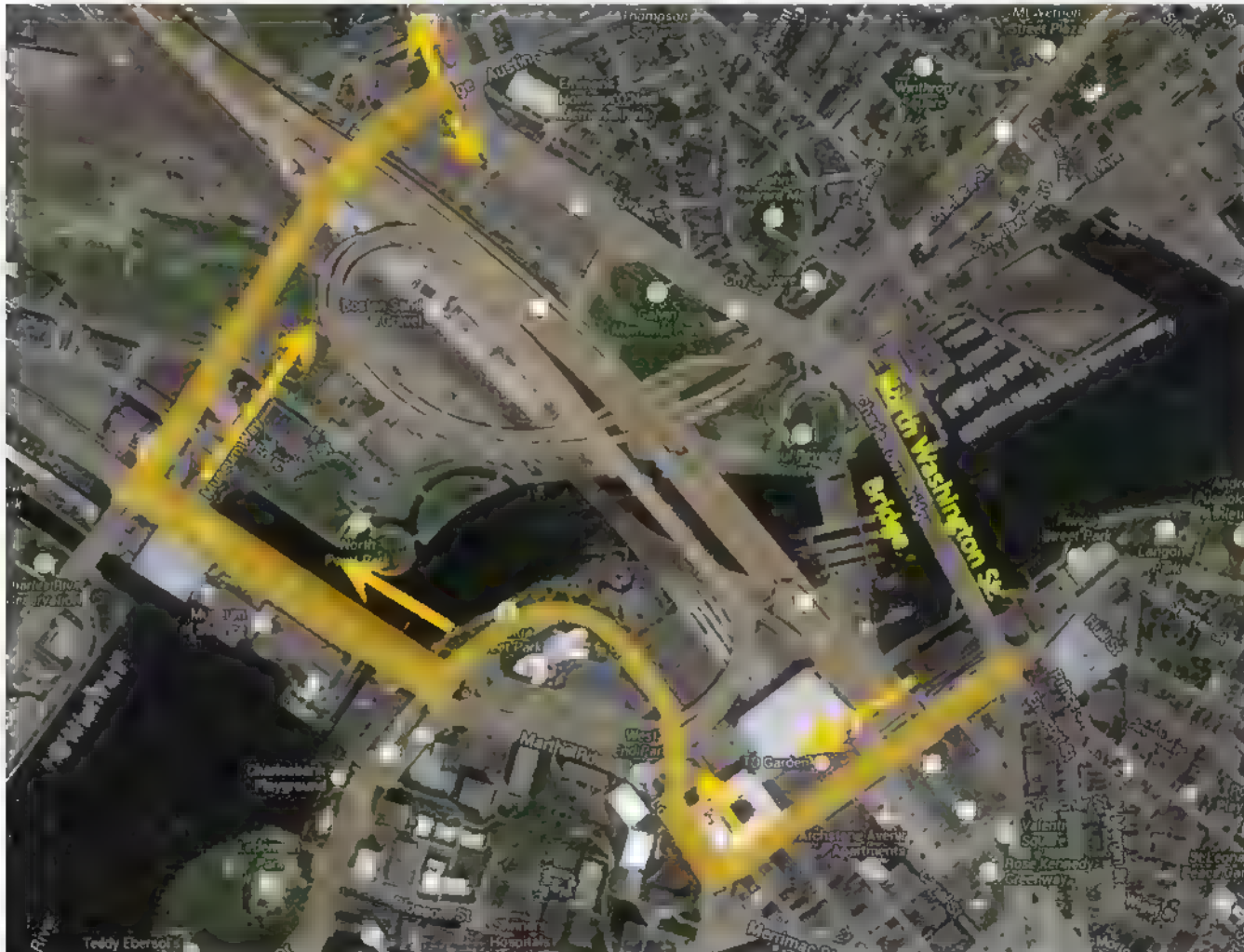
Stage 1A

Construction Sequence and Traffic Impacts



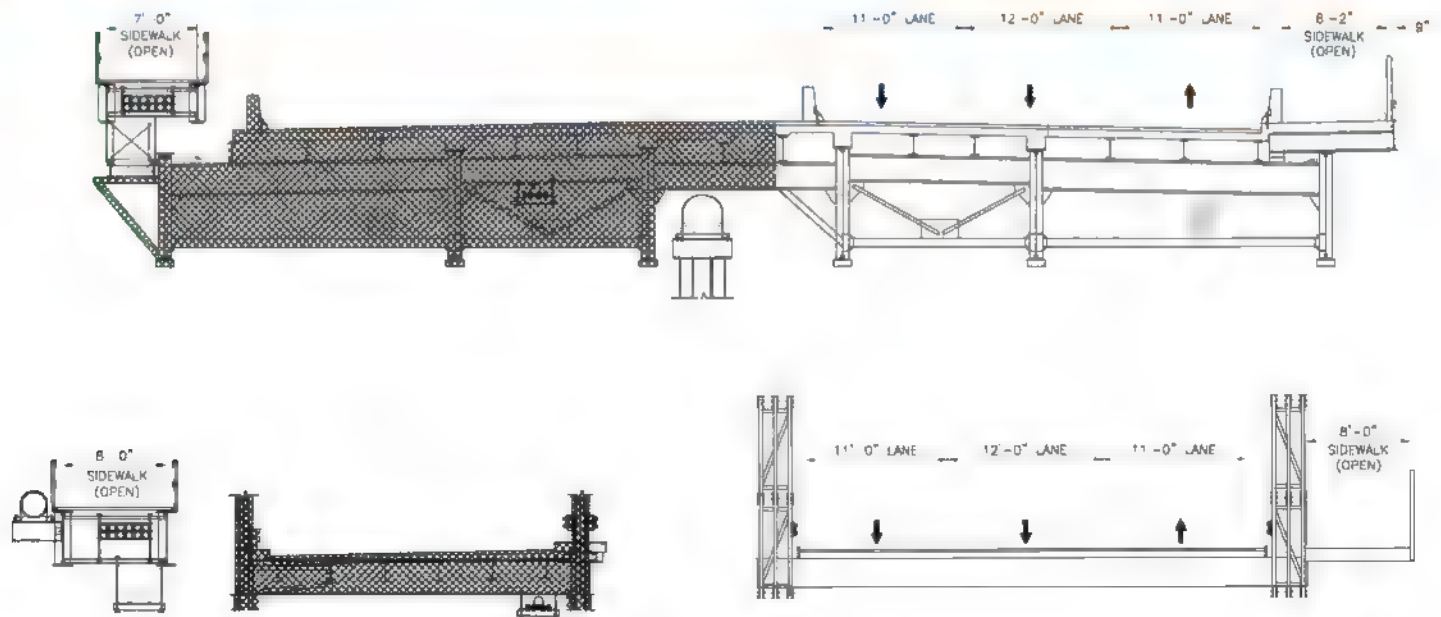
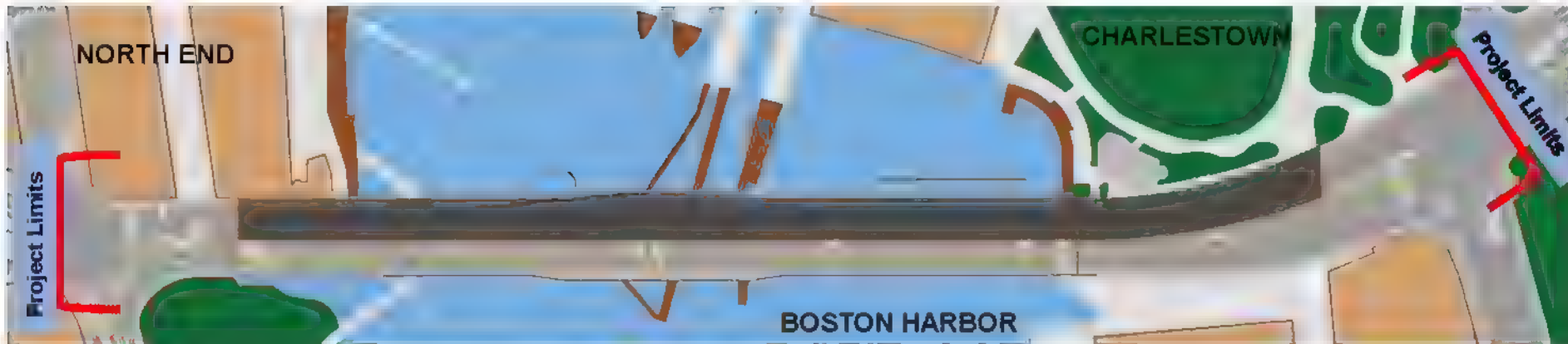
Stage 1B

Construction Sequence and Traffic Impacts



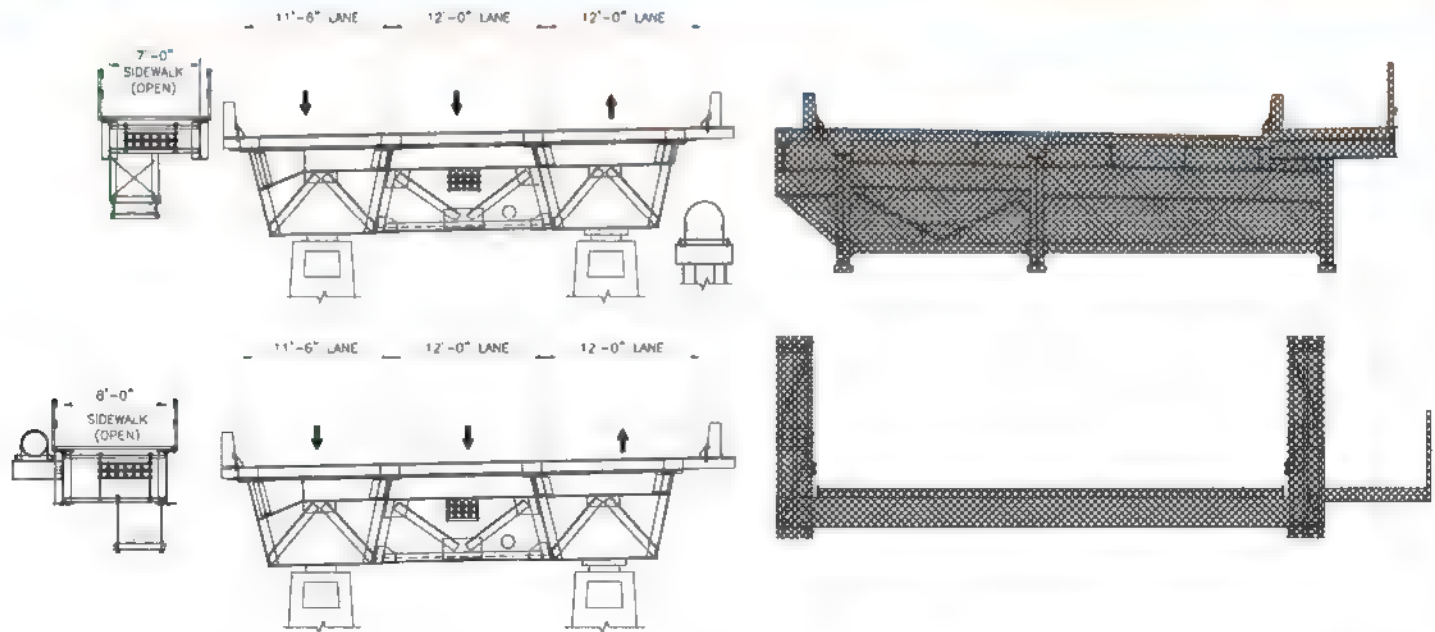
Stage 1B Detour

Construction Sequence and Traffic Impacts



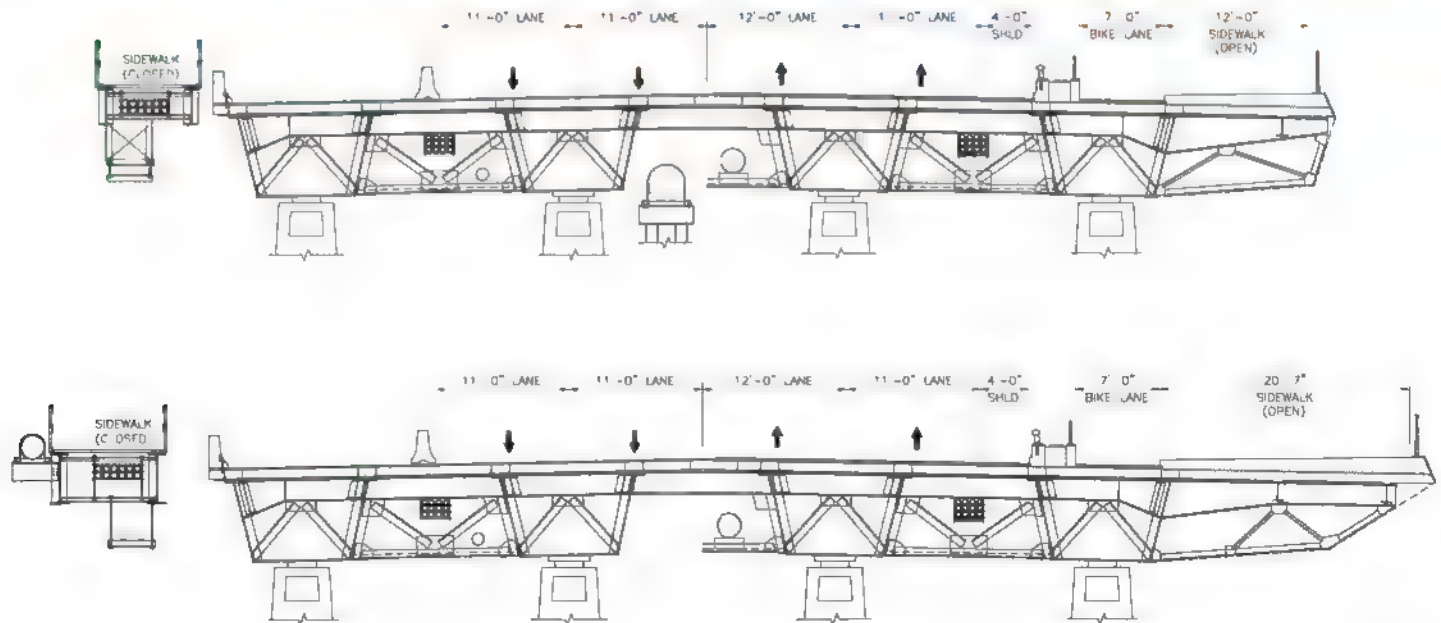
Stage 2

Construction Sequence and Traffic Impacts



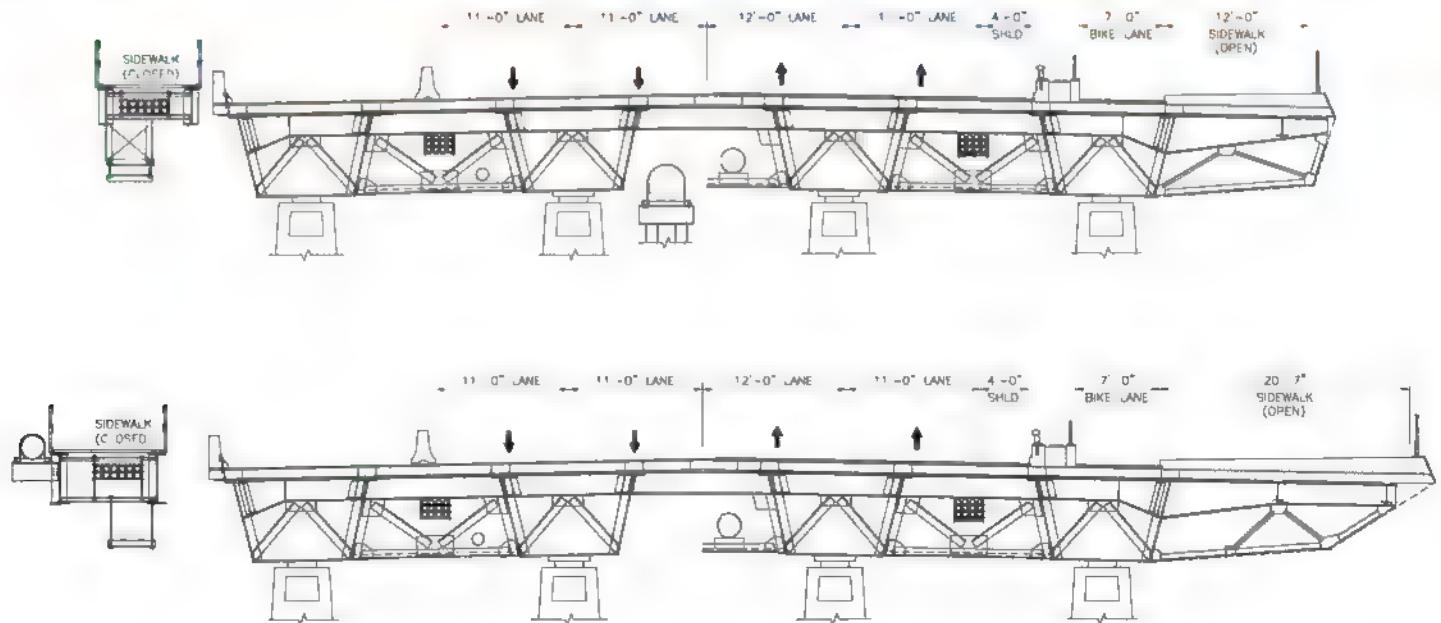
Stage 3

Construction Sequence and Traffic Impacts



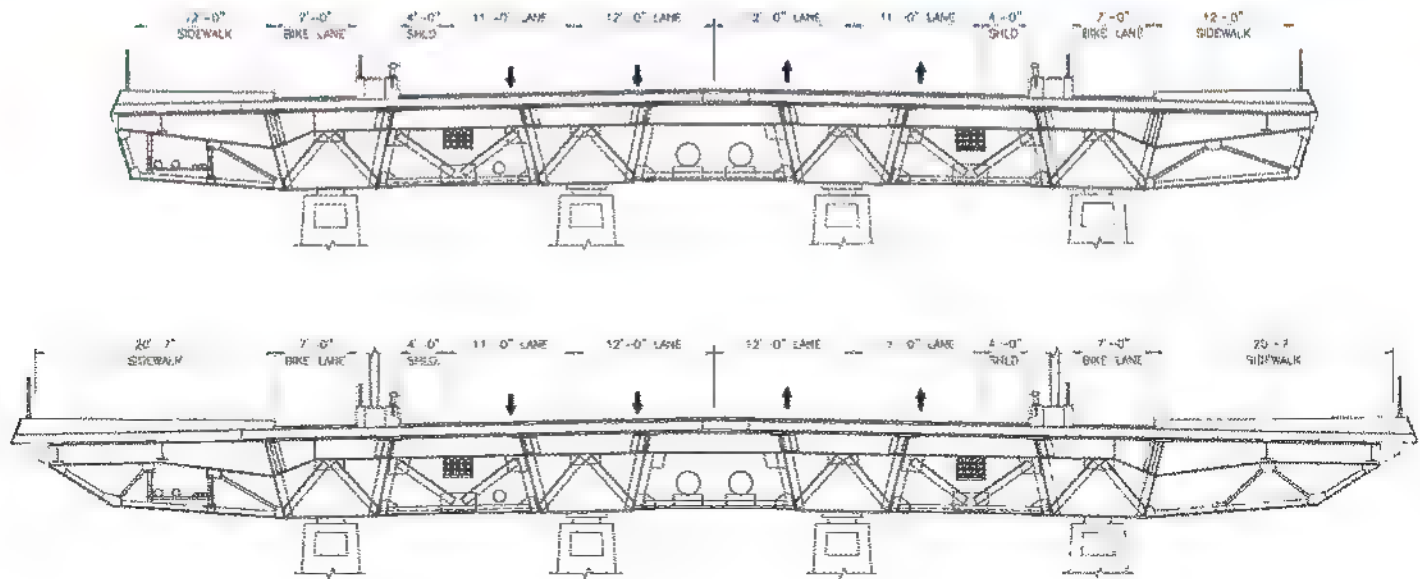
Stage 4A

Construction Sequence and Traffic Impacts



Stage 4B

Construction Sequence and Traffic Impacts



Final

Possibility for dedicated bus lane

Purpose

- Dedicated bus lane providing expedited service inbound
- MBTA and shuttles

Proposed Roadway Dimensions

- 57.5 foot roadway
- Two 11 foot lanes
- Two 10.5 foot lanes
- 10.5 foot dedicated bus lane
- 2 foot shoulders

Project Progress and Schedule

- Completed Conceptual Design: Spring 2015
- Preliminary Design: Fall 2015
- Environmental Permits: 2015 to 2016
- Final Design: Winter 2016
- Anticipated Construction Activity: 2017 to 2020



FAQ

Questions	Answers
Could a water shuttle be implemented between Pier 4 and Converse Headquarters?	A water shuttle is not within the scope and budget of this project; this would be a private endeavor.
Could buses and trucks be detoured during construction?	At this time, buses and trucks will maintain access to the bridge during construction.
How will casino, TD Garden, and rush hour traffic impact movements in and out of Charlestown?	The proposed traffic management plan provides the best alternative given current and projected conditions.
Will two-week look-aheads be provided?	Based on previous MassDOT projects, anticipated that some schedule of look-aheads will be provided with targeted outreach at key times.
How will potential impacts to businesses and abutters be addressed?	The City of Boston and MassDOT will continue to engage in constructive dialogues with impacted parties.

Contact

Chief Engineer:

Patricia A. Leavenworth, P.E.
Project File No. 604173

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Public Outreach:

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Public Involvement Specialist

Howard Stein Hudson
EFlanagan@hshassoc.com
617-482-7080



Thank you

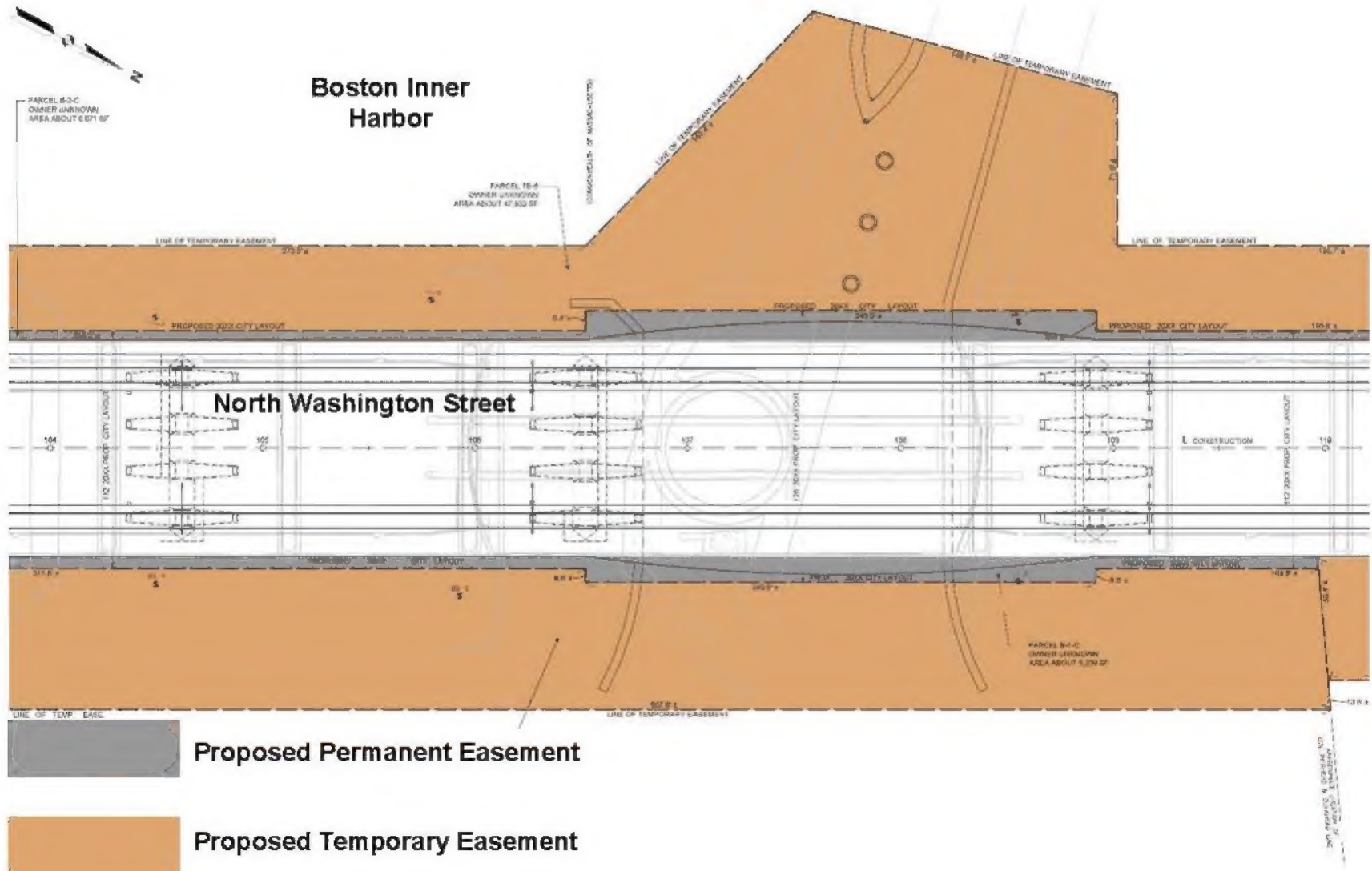
Q & A

North Washington Street Bridge Replacement Project
Boston, Massachusetts

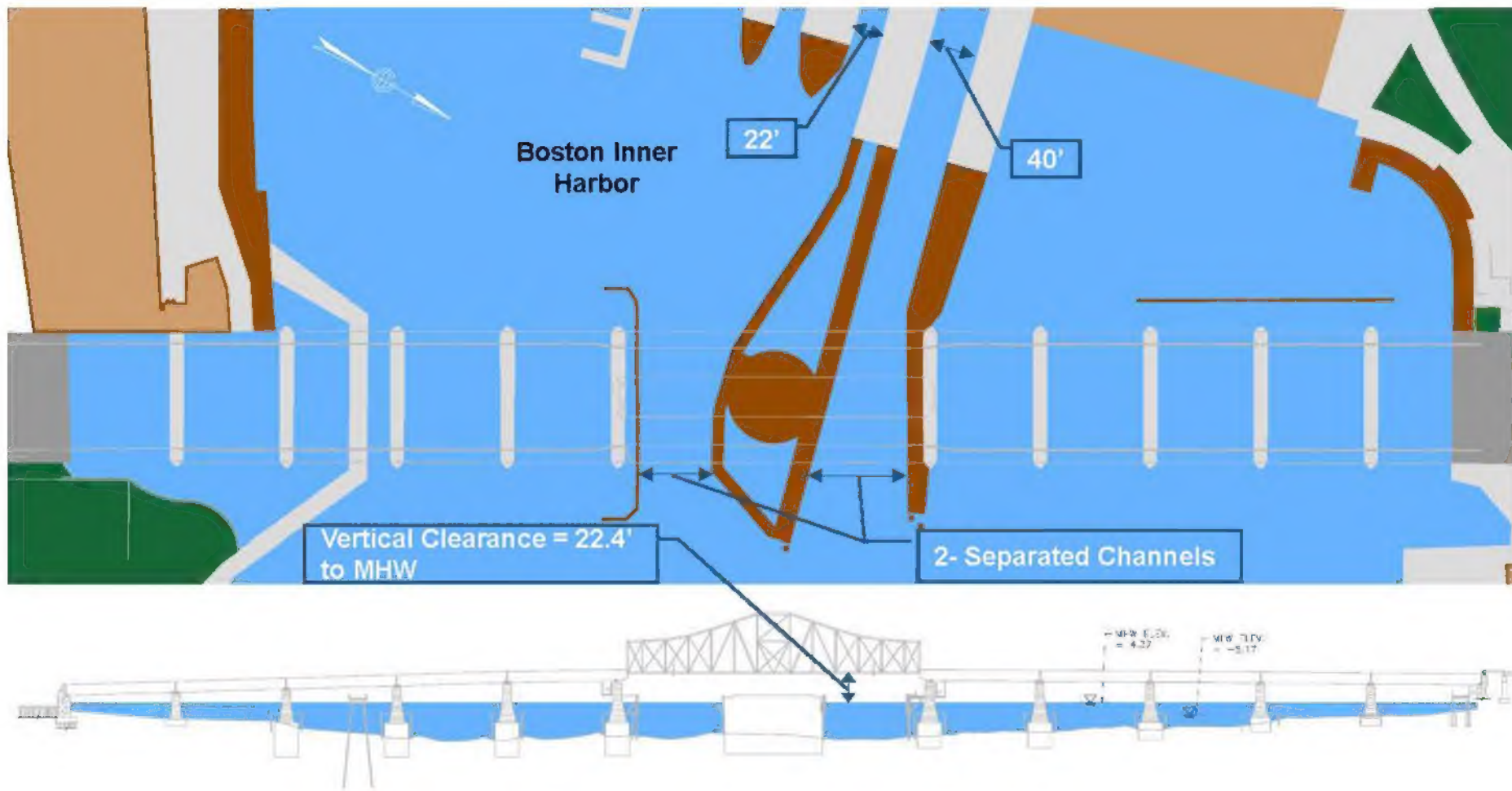


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Right - Of - Way Impacts

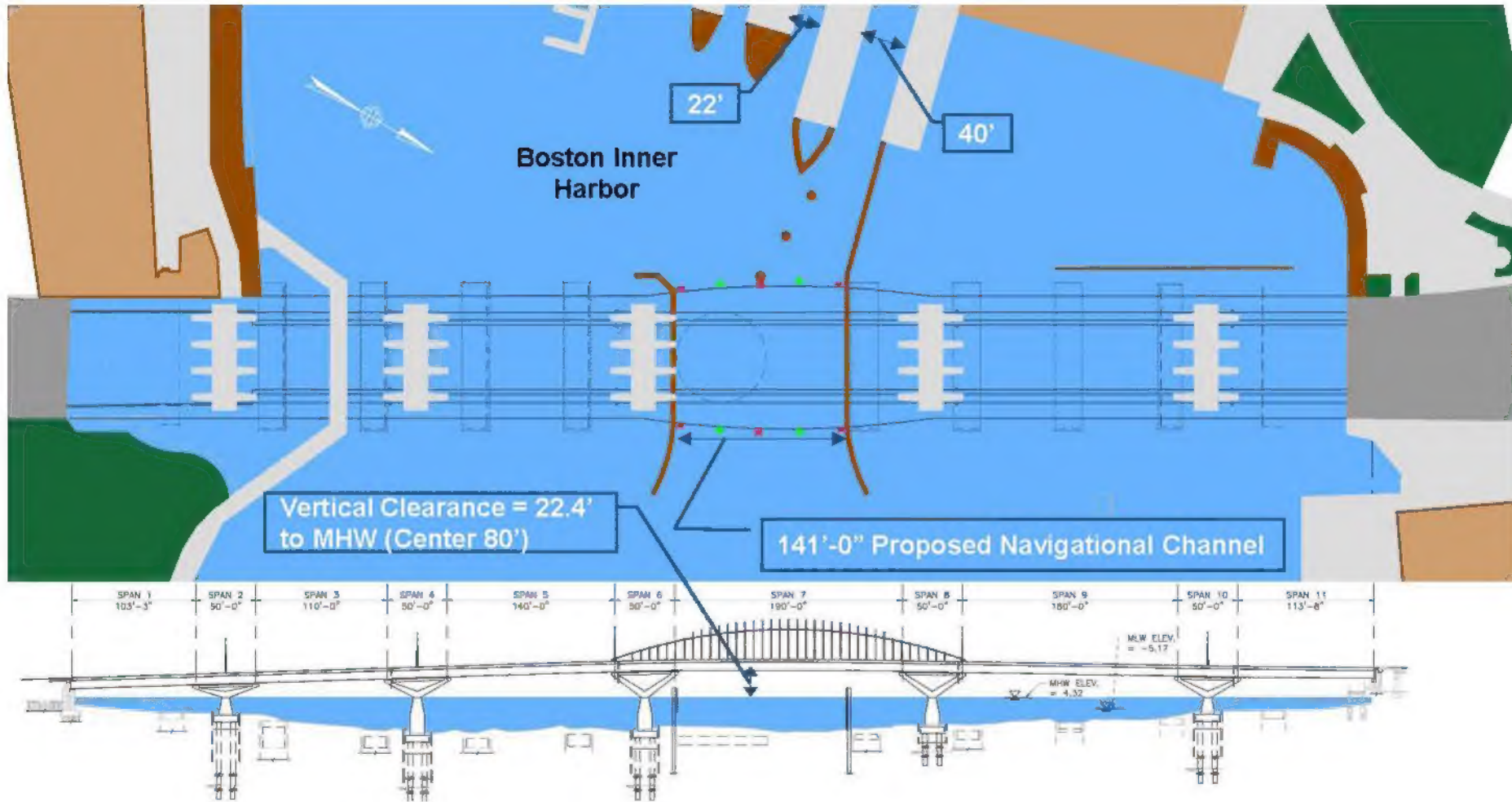


Fender System and Navigational Channel



Existing Fender System

Fender System and Navigational Channel



Proposed Fender System